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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/602,940	06/23/2000	Frank Ronneburg	13237-2720/MS#150533.1	9432

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EXAMINER	
JACOBS, LASHONDA T	

ART UNIT	PAPER NUMBER
2157	9

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/602,940	RONNEBURG ET AL.	
	Examiner	Art Unit	
	LaShonda T. Jacobs	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

This Office Action is in response to Applicant's Amendment and Request for Reconsideration filed on September 23, 2003. Claims 1-19 are presented for further examination. Claims 20-25 are newly added by Applicant are also presented for further examination.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **1-25** rejected under 35 U.S.C. 102(b) as being anticipated by Hemphill et al (hereinafter, "Hemphill", 5,781,716).

As per claim **1**, Hemphill discloses a system for removing a defective server from a server pool comprising:

- a first server associated with a first buddy server and a second buddy server, the first server being operative to transmit a first ping signal to the first buddy server and to transmit a second ping signal to the second buddy server and to receive a first responsive signal from the first buddy server and to receive a second responsive signal from the second buddy server (abstract, col. 3, lines 10-47 and col. 4, lines 30-50);
- a server database operative to maintain the association between the first server and the first buddy server and to maintain the association between the first server and the second buddy server (col. 3, lines 10-47 and col. 4, lines 30-50);

- wherein the first server is further operative to send a first server down signal to the server database, in response to a determination that the first buddy server is down; (col. 4, lines 30-50, col. 5, lines 51-61 and col. 6, lines 22-43); and
- wherein the server database is further operative to associate the first server with a third buddy server in response to the receipt of the first server down signal (col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **2**, Hemphill discloses:

- wherein the first server is further operative to send a second server down signal to the server database, in response to a determination that the second buddy server is down and wherein the server database is further operative to associate the first server with a fourth buddy server in response to the receipt of the second server down signal (col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **3**, Hemphill discloses:

- wherein the first ping signal comprises an ICMP ping signal and wherein the second ping signal comprises an ICMP ping signal (col. 4, lines 30-50, col. 5, lines 51-61 and col. 6, lines 22-43).

As per claim **4**, Hemphill discloses:

- wherein the server database comprises a SQL database maintained on a SQL server (col. 3, lines 25-36, and col. 16, lines 11-23).

As per claim **5**, Hemphill discloses:

- wherein the server database maintains a list of active servers comprising the first server, the first buddy server and the second buddy server, and wherein, in response to the first

server down signal, the server database is further operative to remove the first buddy server from the list of active servers (col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **6**, Hemphill further discloses:

- a client connected to the server database and wherein the list of active servers is used to connect the client to one of the servers in the list of active servers (abstract, col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **7**, Hemphill discloses computer-implemented method for creating a virtual server ring, comprising the step of:

- storing an entry in a server table identifying a plurality of servers in a server pool, wherein each entry comprises a server identification, a first server buddy and a second server buddy (col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **8**, Hemphill further discloses the steps of:

- adding a new server to the virtual server ring by randomly choosing one of the plurality of servers and the randomly chosen server's first server buddy (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42);
- reassigning the new server as the randomly chosen server's first server buddy (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42); and
- reassigning the new server as either the first server buddy or second server buddy of the randomly chosen server's first server buddy (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42).

As per claim **9**, Hemphill further discloses the step of:

- causing at least one of the plurality of servers to monitor its first buddy server and it second server buddy to determine whether one of its buddies is down (col. 4, lines 30-50, col. 5, lines 51-61 and col. 6, lines 22-43).

As per claim **10**, Hemphill further discloses the step of:

- when the monitoring server determines that of its buddies is down, reporting the identity of the down server to the server table (col. 4, lines 30-50, col. 5, lines 51-61 and col. 6, lines 22-43).

As per claim **11**, Hemphill further discloses the steps of:

- causing a routing server, wherein the routing server is responsible for routing a client to the virtual server ring, to no longer route the client to the down server (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42).

As per claim **12**, Hemphill discloses:

- wherein the step of causing the routing server to no longer route the client to the down server comprises the step of removing the down server from the server table (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42).

As per claim **13**, Hemphill further discloses:

- storing a buddy list at each of the plurality of servers, wherein the buddy list comprises the server's first server buddy and the server's second server buddy (col. 3, lines 58-65, col. 10, lines 34-41, and col. 13, lines 1-11).

As per claim **14**, Hemphill discloses:

- wherein the step of causing at least one of the plurality of servers to monitor its first server buddy and it second server buddy to determine whether one of its buddies is

down comprises sending an ICMP ping signal to the first server buddy and to the second server buddy (col. 3, lines 58-65, col. 10, lines 34-41, and col. 13, lines 1-11).

As per claim **15**, Hemphill further discloses the steps of:

- if one of the plurality of servers in the server pool shuts down normally, then causing the normally shutdown server to report its identity to the server table and removing the normally shutdown server from the server table (abstract, col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **16**, Hemphill further discloses:

- reassigning the normally shutdown server's first server buddy and second server buddy to be buddies to one another (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42).

As per claim **17**, Hemphill discloses a computer-implemented method for monitoring:

- assigning each of the plurality of servers a first server buddy and a second server buddy within the server pool (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42);
- causing each of the plurality of servers to monitor the status of its first server buddy and its second server buddy (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42); and
- if one of the plurality of servers determines that one of its buddies is down, then causing the monitoring server to notify a central repository that one of its buddies is down (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42).

As per claim **18**, Hemphill further discloses the steps of:

- removing the down buddy server from the central repository when notification is received that the buddy server is down (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42).

As per claim **19**, Hemphill further discloses the step of:

- reassigning the down server's other buddy to be buddies with the monitoring server (col. 3, lines 10-47, col. 4, lines 30-50 and col. 8, lines 28-42).

As per claim **20**, Hemphill discloses:

- wherein the third buddy server is associated with the first buddy server prior to the first server down signal abstract, col. 3, lines 10-47 and col. 4, lines 30-50.

As per claim **21**, Hemphill discloses:

- wherein the first server is further operative to notify the third buddy server that the first buddy server is down abstract, col. 3, lines 10-47 and col. 4, lines 30-50.

As per claim **22**, Hemphill discloses:

- wherein the fourth buddy server is associated with the second buddy server prior to the second server down signal abstract, col. 3, lines 10-47 and col. 4, lines 30-50.

As per claim **23**, Hemphill discloses:

- wherein the first server is further operative to notify the fourth buddy server that the first buddy server is down (abstract, col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **24**, Hemphill further discloses the step of:

- reassigning the down server's buddies to be buddies with one another (abstract, col. 3, lines 10-47 and col. 4, lines 30-50).

As per claim **25**, Hemphill discloses:

- wherein one of the down server's buddies is the monitoring server, in addition to the down server being a buddy of the monitoring server (abstract, col. 3, lines 10-47 and col. 4, lines 30-50).

Response to Arguments

3. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

The Office notes the following arguments:

a. Leighton does not teach a system recited in claim 1. Leighton is concerned with a hosting system which includes high-level DNS servers that provide a possible low-level DNS server so that a user's DNS system can contact one of the other low-level DNS servers on the list if the first one contacted is down. This is not analogous to the first server and the first and second buddy servers as recited in claim 1 because Leighton does not teach that the low-level DNS servers are associated with one another or that they are capable of sending signals to other servers and receiving responsive signals from the other servers.

b. Leighton does not teach that the ghosts on the list are associated with one another or that the ghosts are capable of sending signals to other ghosts and receiving responsive signals from the other ghosts.

c. Leighton teaches that each of the ghosts has a designated buddy ghost which takes over the load of the ghost if the ghost fails. This is also not analogous to the first server and the first and second buddy servers as recited in claim 1 because each of the ghosts has a single designated buddy ghost instead of a first and second designated ghost and because Leighton discloses when

a ghost fails, the load is taken over by its buddy ghost and then balanced by the low-level DNS system, without discussing how it is determined that a ghost is down.

d. Leighton does not teach a server database to maintain the ghost and buddy ghost designations.

e. Leighton also does not teach that in response to a determination that the first buddy server is down, the first server is operative to send a first server down signal to the server database and that in response to the receipt of the first server down signal, the server database is operative to associate the first server with a third buddy server since there is no discussion. Leighton teaches that when a ghost fails, its buddy ghost takes over, without discussing if any notification of the failure is made. Moreover, when a ghost fails and its buddy server takes over, Leighton does not discuss if the buddy server ghost is associated with another ghost.

f. Claim 1 is not anticipated by Leighton. Leighton also does not disclose dependent claims 2-6 because Leighton fails to teach that the buddy ghost is operative to send a signal to its ghost and receive a responsive signal from its ghost and because there is no discussion of a server database to maintain the ghost and buddy ghost designations.

g. Leighton does not teach a computer-implemented method as recited in claim 7.

h. Leighton fails to teach that the server entries on the list include a server identification, a first server buddy and a second server buddy since there is no discussion of associations between the servers on the list.

i. Claim 7 is not anticipated by Leighton. Dependent claims 8-16 are also not anticipated by Leighton because Leighton fails to disclose adding a new server to the list of possible servers or to the buddy system and assigning the new server a buddy.

j. Leighton does not disclose a method for monitoring the status of a plurality of servers as recited in claim 17.

k. Leighton does not disclose causing a monitoring server to notify a central repository that one if its buddies is down if the monitoring server determines that one of its buddies is down.

l. Leighton fails to disclose the buddy ghost notifying a central repository that its ghost is down.

In considering (a)-(l), Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,696,895 to Hemphill et al

U.S. Pat. No. 6,370,657 to Jansen et al

U.S. Pat. No. 6,370,056 to Olarig et al

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaShonda T. Jacobs whose telephone number is 703-305-7494. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 703-308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

LaShonda T. Jacobs
Examiner
Art Unit 2157

ltj
December 13, 2003

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